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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,418	07/10/2000	Michael G. Mayer	85773-227	9352

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EXAMINER
SEFCHECK, GREGORY B

ART UNIT	PAPER NUMBER
2662	4

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/613,418	MAYER, MICHAEL G.	
	Examiner	Art Unit	
	Gregory B Sefcheck	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 July 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- The clock generator unit, referenced as "204" in the specification on pg. 8-11, is not labeled as such in Figure 2.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because of the following:

- Reference character "206" has been used to designate both the "multiplier" and the "mapping unit" of Figure 2.
- Reference characters "CLK2" in Fig. 2 and 3 and "CLK" in Fig. 4 have both been used to designate the "line transmission rate" of signal S' in Fig. 1-4.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the following:

- The specific inputs to functional elements 304 and 306 of Fig. 3 and 412, 414, and 416 of Fig. 4 are not shown as described in the specification.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

- 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:
    - The use of the terms "line transmission rate", "arbitrary transmission rate", "data clock signal", "CLK1", "CLK2", and "CLK" are presented throughout the specification in an inexact and confusing manner.
- Pg. 3, line 14 (typo) - Application 09/349,087 (not 09/349,086) entitled "Mappy Arbitrary Signals into SONET" was filed by Roberts on July 8, 1999.

- Pg. 9, lines 9 and 23 – "206" is used to reference two separate elements (multiplier and mapping unit) in Fig. 2.
- Pg. 8, line 22-23 and Pg. 9, lines 28-30 – use of "line transmission rate" is confusing. It is disclosed to be indicative of the second data clock signal on Pg. 8. However, it is also shown to be recovered from the first data clock signal on Pg. 9. See Paragraph 5 above.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-8 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 1 and 16 recite the limitation "the optical network" at the end of part c) in each claim. There is insufficient antecedent basis for this limitation in the claim.
- Claims 2-8 are rejected because of their dependence on Claim 1.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-6 and 9-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang (US005563891A).

In regards to Claim 1, 10 and 16 (synchronizer and method thereof comprising input, data/clock recovery unit, clock generator, mapping unit and output),

Referring to Fig. 6, Wang discloses a synchronizer and method thereof comprising an input for receiving a digital signal and a data recovery unit (element 110 and input signal) that recovers a first clock signal, indicative of the signal's transmission rate, from the received signal (Col. 8, line 33; Fig. 6, element 110).

The recovered first clock signal is then utilized to generate a second clock signal indicative of an allowable transmission rate of the network (Col. 8, lines 43-57; Col. 10, lines 15-19; Fig. 6, elements 115, 130, 135, 140, 145 and 155). Note Wang's use of several independent functional blocks, used together as a clock generator.

Wang further discloses a mapping unit (elements 120 and 150) that receives the second clock signal and maps the data into a frame structure at the network transmission rate (Col. 1, lines 44-45) and outputs the signal to the network.

9. In regards to Claims 2-5 and 11-14 (network is optical, asynchronous optical, electrical or asynchronous electrical),

Wang discloses applicability of the synchronizer and method in communications networks such as data networks (Col. 1, lines 18-20), which encompasses asynchronous optical and electrical networks.

10. In regards to Claim 6 and 15 (distribute data through time slots and stuff bits),

Wang shows a synchronizer and method thereof in which data within a frame are put into payload and stuffing bit positions of an appropriate time-slot assignment (Col. 10, lines 22-25).

11. In regards to Claim 9 (de-synchronizer comprising input, clock recovery unit, reverse mapping unit, data transmitter, output),

Wang discloses a de-synchronizer that receives a data signal (input). A data pump (clock recovery unit and reverse mapping unit) extracts data bits and recovers a clock signal based on the line transmission rate (Fig. 6, Col. 10, lines 28-34). The extracted data bits are then transmitted through an elastic buffer (data transmitting unit) at the original unsynchronized (arbitrary) rate (Fig. 6; Col. 10/11, lines 28-7). The data is then fed to a line interface (output) unit (Fig. 6; Col. 11, lines 8-9).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US005563891A) in view of Christensen et al (4,488,294).

In regards to Claims 7 (clock generator has multiplier) and 8 (multiplier multiplies CLK1 and control signal to produce CLK2), Wang discloses a synchronizer that covers all limitations of the parent claims (claims 1 and 6).

Wang does not specifically show a synchronizer with a clock generator utilizing a multiplier to multiply a first data clock signal and a control signal to produce a second clock signal.

Christensen et al (4,488,294) discloses a system for establishing and supporting data traffic (synchronizer) that defines a synchronous transmission clock rate (second clock signal) by multiplying the clock rate of the user's data (first clock signal) by a variable factor (control signal) (Abstract).

It would also have been obvious to one of ordinary skill in the art at the time of the invention to modify the synchronizer of Wang with a clock generator such as that taught by the synchronizer of Christensen that multiplies a first clock signal by a control signal to produce a second clock signal. This would effectively maintain a correlation between the first and second clock signals as the data bits are mapped to different rates throughout the synchronization process.

Note that clock generation employing multiplication as claimed is also disclosed in the de-synchronizer of Wang through element 260 of Fig. 6.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Jain (US006259677B1) discloses a clock synchronization and dynamic jitter management for voice over IP and real-time data.
- Rude (US006229863B1) discloses reducing waiting time jitter.
- Fourcroy (US006169772B1) discloses stretching setup and hold times in synchronous designs.
- Coquerel (US005351271A) discloses a method and device for measuring the successive amplitude levels of signals received on a transmission channel.
- Regent (US005287360A) discloses a device for inserting information bits into a specific frame structure.
- Rios (US005256912A) discloses a synchronizer apparatus for system having at least two clock domains.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B Sefcheck whose telephone number is 703-305-0633. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

GBS
8-27-2003

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
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